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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/772,082

02/04/2004

Hiroyuki Uwazumi

FUJI:289

2572

37013 7590 08/09/2007
ROSSI, KIMMS & McDOWELL LLP.
P.O. BOX 826
ASHBURN, VA 20146-0826

EXAMINER

RICKMAN, HOLLY C

ART UNIT

PAPER NUMBER

1773

MAIL DATE

DELIVERY MODE

08/09/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/772,082

Applicant(s)

UWAZUMI ET AL.

Examiner

Holly Rickman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 May 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 16-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patel et al. (US 4224381).

Patel et al. disclose a magnetic recording medium having an Al alloy substrate, a first magnetic NiP layer which contains about 6 wt% of P corresponding to the claimed soft magnetic layer, and a non-magnetic NiP layer disposed thereon. The thickness of the magnetic NiP layer is as high as 20 micron (ie, 800 microinches) and the thickness of the non-magnetic NiP layer is between the claimed values of 0.5-7 microns (i.e. 80 microinches). See col. 3, lines 34-53; col. 6, lines 6-26.

Patel does not specifically disclose a first magnetic NiP layer containing 0.5 to 4 wt% P. However, it would have been obvious to one of ordinary skill in the art at the time of invention that an amount of "about 6 wt%" as disclosed by Patel would read on the claimed range of 4 wt%. To choose a value of 4 wt % given Patel's teaching of using "about" 6 wt% (see col. 3, lines 36-40) would have been well within the purview of one of ordinary skill in the art at the time of invention.

The examiner notes that there is no evidence of unexpected results associated with the claimed range. In the absence of such a showing, the examiner maintains that a prima facie case of obviousness has been made.

3. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Patel et al. (US 4224381) in view of Oshima (US 6818031).

Patel et al. disclose all of the limitations of the claims as detailed above, except for the required surface roughness and waviness of the soft magnetic NiP layer.

Oshima teaches that it is known in the art to polish a NiP plated substrate layer to have a roughness Ra of less than 0.25 nm and a waviness Wa of less than 0.25 nm. (col. 11, line 45 to col. 12, line 8). The reference teaches that the improved surface smoothness allows for increased areal density and reduced flying height (col. 1, line 15 to col. 2, line 8).

It would have been obvious to one of ordinary skill in the art at the time of invention to polish the surface of the NiP layer taught by Patel in accordance with the teaching of Oshima in order to produce a recording medium having reduced flying height and increased areal density.

4. Claims 8-9 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patel et al. (US 4224381) in view of Wu et al. (US 6432562).

Patel et al. disclose all of the limitations of the claims as detailed above, except for the claimed structure of the seedlayer, perpendicular recording layer and protective layer deposited on the NiP/Al base layer disclosed therein. The reference teaches that the magnetic recording layer deposited on the NIP-coated Al base is not particularly limited (col. 6, lines 49-63).

Wu et al. teach a magnetic recording structure including a seedlayer, a perpendicular magnetic layer and a protective overcoat layer for deposition on an Al alloy substrate.

It would have been obvious to one of ordinary skill in the art to use the recording layer structure taught by Wu et al. in combination with the NiP-coated Al substrate structure taught by Patel et al. in order to achieve the benefits disclosed by Wu et al. such as high areal density and high magnetic performance such as high SNR.

5. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Patel et al. (US 4224381) in view of Wu et al. (US 6432562) further in view of Oshima (US 6818031).

Patel et al. in view of Wu et al. teach all of the limitations of the claims as detailed above, except for the required surface roughness and waviness of the soft magnetic NiP layer.

Oshima teaches that it is known in the art to polish a NiP plated substrate layer to have a roughness Ra of less than 0.25 nm and a waviness Wa of less than 0.25 nm. (col. 11, line 45 to col. 12, line 8). The reference teaches that the improved surface smoothness allows for increased areal density and reduced flying height (col. 1, line 15 to col. 2, line 8).

It would have been obvious to one of ordinary skill in the art at the time of invention to polish the surface of the NiP layer taught by Patel in accordance with the teaching of Oshima in order to produce a recording medium having reduced flying height and increased areal density.

Allowable Subject Matter

6. Claims 3-5, 7, 10-12 and 14 are allowable over the closest prior art to Patel. Patel fails to teach or suggest a structure having a non-magnetic NiP layer in between the magnetic NiP

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layer and the base layer. The prior art fails to teach or suggest a motivation to add such a layer in between the magnetic NiP layer and base layer taught by Patel.

Response to Arguments

7. Applicant's arguments filed 5/21/07 have been considered but are not persuasive.

Applicant argues that the amendment of the claims to require a range of 0.5-4 wt% clearly distinguishes over Patel. The examiner disagrees because Patel teaches a range of "about" 6 wt% which appears to overlap the claimed upper limit of 4 wt%.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Holly Rickman whose telephone number is (571) 272-1514. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Holly Rickman
Primary Examiner
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